



Docket No.: 17231A US

AF/2800  
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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: H. Herrmann, et al.  
Application no.: 09/924,641  
Filed: August 8, 2001  
Title: Improved Contact for Error Resistant Coupling of Electrical Signals  
Examiner: T. Nguyen  
Group Art Unit: 2833

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## TRANSMITTAL OF APPEAL BRIEF

Box AF  
Commissioner for Patents  
Washington, D.C. 20231

Sir:

Transmitted herewith in triplicate is the Appeal Brief in this application with respect to the Notice of Appeal filed on January 14, 2003. Any necessary extension of time is hereby requested.

☐ An oral hearing is requested

The following fees are submitted:

	One month's extension fee (37 CFR §1.17(a))	(\$110.00)	
	Two months' extension fee (37 CFR §1.17(b))	(\$400.00)	
	Three months' extension fee (37 CFR §1.17(c))	(\$920.00)	
	Four months' extension fee (37 CFR §1.17(d))	(\$1440.00)	
X	Fee for filing Appeal Brief (37 CFR §1.17(f))	(\$320.00)	320.00
	Fee for requesting an Oral Hearing (37 CFR §1.17(g))	(\$280.00)	
TOTAL:			320.00

Please charge the above-indicated TOTAL amount to Deposit Account No. 23-1950. This sheet is submitted in triplicate.

The Commissioner is hereby authorized to charge payment of any additional fees, in particular the following fees, associated with this communication, or credit any overpayment, to Deposit Account No. 18-0560:

Any additional fees required under 37 CFR 1.16.

Any patent application processing fees under 37 CFR 1.17.

## CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Commissioner for Patents, Washington, D.C.

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March 31, 2003	(date of deposit)
Michael Aronoff	
Name of person signing certificate	
Signature	Michael Aronoff
Date	3/4/03

Respectfully submitted,

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**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In the Matter of the Application of: H. Herrmann, et al.

For: **Improved Contact for Error Resistant Coupling of Electrical Signals**

Serial No.: 09/924,641

Filed: August 8, 2001

Examiner: T. Nguyen

Group Art Unit: 2833

**APPEAL BRIEF**

Box AF  
Commissioner for Patents  
Washington, DC 20231

Sir:

This is an appeal from the Final Rejection, dated December 31, 2002 of claims 27 and 28 of this application. A Notice of Appeal was mailed January 14, 2003. Please charge the fee for this brief (\$320) to Deposit Account No. 23-1950. This brief is submitted in triplicate.

**I. Real Party in Interest**

The real party in interest in this application is The Whitaker Corporation, a corporation organized and existing under the laws of the State of Delaware, having its principal place of business at 4550 New Linden Hill Road, Suite 140, Wilmington, DE 19808. This is shown on the assignment recorded June 19, 1998 on reel 9261, frame 0004 in the parent application.

**II. Related Appeals and Interferences**

There are no related appeals or interferences known to Appellant's legal representative or assignee which will directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

CERTIFICATE OF MAILING	
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Commissioner for Patents, Washington, DC 20231, on the date shown below.	
Name of Applicant, Assignee, or Reg Representative	<u>Michael Aronoff</u>
Signature <u>Michael Aronoff</u>	Date <u>3/31/03</u>

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### III. Status of Claims

Claims 27 and 28 are pending in this application. Claims 27 and 28 are independent claims.

### IV. Status of Amendments

Claim 28 was amended in a supplemental preliminary amendment. Otherwise, there have been no amendments to the claims.

### V. Summary of the Invention

The present invention is directed to an electrical contact and a connector assembly incorporating the contact. More particularly, the present invention is directed to an electrical contact that provides improved "hot swap" capability. In other words, the ability to insert and remove electronic cards into and out of a system while the system is on without negative effects on the system.

### VI. Issues

The following issue is presented for review:

Whether claims 27 and 28 are unpatentable under 35 USC § 103 as obvious over U.S. Patent No. 4,747,783 to Bellamy, et al. in view of U.S. Patent No. 5,236,789 to Cowie, et al?

### VII. Grouping of Claims

Applicants do not accept that the rejected claims stand or fall together. For the reasons set out below, Applicants contend that claims 27 and 28 are separately patentable.

### VIII. Arguments

#### A. The Rejection Under 35 USC § 103

##### (1) The References Summarized

The Bellamy reference is directed to overcoming negative effects associated with "hot plug" or "hot swapping" connectors into active circuits. In order to overcome these negative effects, the Bellamy reference teaches a connector "having at least one long resistive coated pin" wherein when the connector is inserted into a circuit board connector the long pin makes "initial contact and the voltage is applied gradually to the card capacitors." (See Bellamy, col. 2, ll. 7-21) The system is also designed to prevent high frequency noise. (See Bellamy, col. 2, ll. 31-34) To this end, the resistive layer 13 is made of a relatively high resistance material (2 ohms in

a first embodiment and 60 to 100 ohms in a second embodiment). (See col. 3, lines 36-64)

As illustrated in Figure 1 of the Bellamy reference, the pin 11 (made of conductive material, see col. 3, ll. 5 - 6) is separated from an outer layer of resistive material 13 by an insulating layer 15 (see col. 3, ll. 9 - 12). Because of the insulating layer 15, current can not flow directly, i.e., along a shortest path, from the mating contact 19 to the conductive portion 11. The current must first travel along the resistive portion 13 (to the right of the mating contact 19 in Figure 1 of Bellamy) until it reaches the end of the insulating layer 15 before the current is able to reach the conductive portion 11. In other words, the current can not take a shortest path between the mating contact 19 and the conductive portion 11, which would be a straight line directly down from the mating contact 19 (again using Figure 1 of the Bellamy reference for orientation) to the conductive portion 11.

The Cowie reference is directed to coatings that provide low electrical resistance in both ambient and high temperatures. (See col. 2, ll. 5-8) This is quite a distinct and contrary function as compared to the Bellamy reference. More particularly, the Cowie reference teaches a coating having a static contact resistance of less than 20 milliohms and preferably less than 10 milliohms. (See col. 3, ll. 5-7, 20-22, and Tables 2 and 3) The purpose of the Cowie reference is to provide a coating that is resistant to oxidation and corrosion yet provides **low electrical resistance**. As such, a low resistance material is applied to a copper or copper alloy substrate therein providing a high conduction contact that is resistant to oxidation and corrosion.

## (2) The Examiner's Position

The Examiner indicated in the Office Action mailed December 31, 2002 (paper number 9) that the pending claims (i.e. claims 27 and 28) were rejected because the Bellamy reference substantially discloses the claimed invention except that the resistive portion is not in direct contact with the conductive portion and the Cowie reference teaches a contact comprising two different materials in direct contact with each other to provide good electrical conduction. Therefore, "it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a resistive material in direct contact with a conductive material onto the contact of the Bellamy reference as taught by the Cowie reference to provide a good electrical conduction." (Office Action of 12/31/02 at page 2)

The Examiner has not made any separate comments on the patentability of the claims.

(3) The Applicants' Position

It is Applicants' position that the Bellamy reference fails to teach each and every element of the claims and that the examiner has misinterpreted both the Bellamy reference and the Cowie reference. Particularly, a proper interpretation of these references would not motivate one of ordinary skill to combine the teachings of the two references.

The Bellamy reference fails to teach an electrical contact (claim 27) that allows current flow along a shortest path between a conductive portion of the contact and a mating contact or a connector assembly (claim 28) having a first contact of a conductive material and a resistive material exposed for direct, initial engagement with a second contact to produce a connection along a shortest path between the second contact and the conductive material.

The examiner has applied the Cowie reference to remedy this deficiency in the Bellamy reference. To this end, the examiner states that the Cowie reference teaches two different materials in direct contact with each other and based upon that simple fact one of ordinary skill in the art would combine the two references to achieve the present invention. This leap is inappropriate and can only come from hindsight.

One can not reasonably state that the Cowie reference simply teaches two different resistive materials in direct contact with each other. One must appreciate that the teaching is to use the two resistive materials that are in direct contact with each other wherein the outer material will provide relatively **low electrical resistance** and improved resistance to oxidation and corrosion. The Cowie reference does not provide any teaching or suggestion to use this configuration outside of this specific context.

This is contrary to the Bellamy connector in which the outer or resistive layer provides **a relatively low conduction** contact that keeps the current flow relatively low so as to slowly charge the capacitors and limit high frequency noise.

In light of the foregoing, it seems completely clear that the two references not only teach distinct objectives but opposite objectives. As such, there would not have been any motivation for one of ordinary skill in the art to combine these references to achieve the present invention.

IX. Appendix

An Appendix, containing the claims now on appeal, is attached.

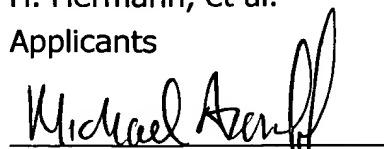
Conclusion

For the reasons set out above, Applicants believe that the Examiner's rejection of the claims is erroneous and should be reversed. Such reversal is respectfully requested.

Respectfully submitted,

H. Hermann, et al.  
Applicants

By:

A handwritten signature in black ink, appearing to read "Michael Aronoff", is written over a horizontal line.

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IX. Appendix

27. An electrical contact comprising:

a conductive portion of a material having a first resistivity; and

a resistive portion of a material having a second resistivity that is significantly greater than the first resistivity, the resistive portion exposed for direct engagement with a mating contact and in direct contact with the conductive portion to allow current flow along a shortest path between the mating contact and the conductive portion.

28. A connector assembly comprising:

a first contact and a second contact configured to mate with the first contact;

the first contact configured for slidingly engaging the second contact to continuously define an electric connection between the first contact and the second contact and comprising conductive material and a resistive material exposed for direct, initial engagement with the second contact to produce an initial high resistance connection along a shortest path between the second contact and the conductive material.